Amendments To The Specification:

In the Substitute Specification filed in this application, please amend paragraph [0011] as follows:

Through the inventive layer of ~~hydrophobing~~ hydrophobic material provided on the surface of the bipolar plate, water which comes into contact with the bipolar plate forms small droplets which only adhere loosely to the bipolar plate and can thus at only low flow velocity of a gas flowing past be taken up by the gas flow and removed from the fuel cell.

In the Substitute Specification filed in this application, please amend paragraph [0012] as follows:

Because of its solubility in a solvent the ~~hydrophobing~~ hydrophobic material can be applied in a dissolved state using a simple and normal application method, such as spraying, wiping, brushing, dipping, pressure etc. to the bipolar plate. After the vaporization of the solvent and if necessary immobilization of the remaining materials by a temperature step at increased temperature the desired layer from the ~~hydrophobing~~ hydrophobic material remains on the surface of bipolar plate.

In the Substitute Specification filed in this application, please amend paragraph [0013] as follows:

With the aid of the concentration of the ~~hydrophobing~~ hydrophobic material in the solvent the thickness of the ~~hydrophobing~~ hydrophobic layer and thereby the hydrophobicity and the electrical contact resistance between the bipolar plate and an adjacent electrode can be adjusted in a simple way. A small concentration of the ~~hydrophobing~~ hydrophobic material in the solvent leads to a layer with low hydrophobicity and almost constant electrical contact resistance. A higher concentration of the ~~hydrophobing~~ hydrophobic material produces a correspondingly thicker layer with correspondingly higher hydrophobicity, but with a deterioration of the electrical contact resistance.

In the Substitute Specification filed in this application, please amend paragraph [0014] as follows:

A desired lower electrical contact resistance is in this case solely obtained by the concentration of the ~~hydrophobing~~ hydrophobic material in the solvent and the layer thickness thus produced; Additional metallic components in the layer for reducing the contact resistance are not necessary nor is there provision for them.

In the Substitute Specification filed in this application, please amend paragraph [0015] as follows:

The ~~hydrophobing~~ hydrophobic material preferably consists entirely or partly of an amorphous fluoropolymer. Amorphous fluoropolymers, e.g. amorphous modifications of Teflon, can be applied already dissolved in suitable solvents and thinned before use to an optimum concentration.

In the Substitute Specification filed in this application, please amend paragraph [0016] as follows:

In a further advantageous embodiment of the invention there is provision for the ~~hydrophobing~~ hydrophobic material to consist entirely or partly of a polysiloxane compound or from alkylsilanes, especially alkyl-aryl-silanes or halogen alkyl-aryl-silanes. Such compounds also stand out by virtue of their good solubility in solvents and good adhesion to metal surfaces.

In the Substitute Specification filed in this application, please amend paragraph [0017] as follows:

To simultaneously achieve just a slight effect on the contact resistance between the electrodes and the bipolar plate as well as a good removal of water from the fuel cell, an advantageous embodiment of the invention provides for the thickness of the layer of ~~hydrophobing~~ hydrophobic material to be set to an optimum between a low electrical contact resistance to an adjacent electrode and a high permanent hydrophobicity.

In the Substitute Specification filed in this application, please amend paragraph [0018] as follows:

A low contact resistance and a simultaneous good hydrophobicity of the layer can be achieved by the ~~hydrophilic~~ hydrophobic layer having a thickness in the range of 0.1 nm to 50 nm, especially in the range 0.5 nm to 5 nm.

In the Substitute Specification filed in this application, please amend paragraph [0019] as follows:

A reduction of the transfer resistance between the bipolar plate and the electrode is still possible by providing a highly-conducting contact layer, especially made of gold, between the bipolar plate and the layer of ~~hydrophobing~~ hydrophobic material.

In the Substitute Specification filed in this application, please amend paragraph [0025] as follows:

On the electrode side the bipolar plates 5 feature on their surface a layer 4 of a ~~hydrophobing~~ hydrophobic materiel soluble in a solvent. Preferably this layer 4 consists entirely or partly of a amorphous fluoropolymer, especially an amorphous modification of Teflon (for example an amorphous copolymer made of 65-99 Mol Perfluoro-2,2-Dimethyl-1,3-Dioxol with a complementary quantity of Tetrafluor ethylene available from DuPont Fluoroproducts under the product name Teflon®AF). Alternatively the layer 4 consists of a polysiloxane compound or alkylsilanes, especially alkyl-aryl-silanes or halogen-alkyl-aryl silanes.

In the Substitute Specification filed in this application, please amend paragraph [0026] as follows:

For improving the contact resistance between the bipolar plate 5 and the adjacent anode 7 or cathode 11 there is an additional highly-conductive contact layer 6 made of a noble metal between the ~~hydrophobing~~ hydrophobic layer 4 and the bipolar plate 5.

In the Substitute Specification filed in this application, please amend paragraph [0028] as follows:

The thickness of the ~~hydrophobing~~ hydrophobic layer 4 is in this case adjusted to an optimum between a low electrical contact resistance of the cathode 11 or the anode 7 to the bipolar plate 5 and a high hydrophobicity of the layer 4 and amounts to 0.5 nm to 5 nm. The layer thickness is adjusted in this case through corresponding thinning of the ~~hydrophobing~~ hydrophobic material in a suitable solvent.

In the Substitute Specification filed in this application, please amend paragraph [0032] as follows:

With bipolar plates modified in this way short stacks are constructed with suitable membrane electrolytic electrode units and operated in hydrogen/oxygen mode. Characteristic fuel cell data such as for example a flow density of 1 A/cm2 at a voltage of 0.7 V for an individual cell for operating times of more than 1500 hours. The electrical data thereby differs from that of corresponding fuel cells which are operated with conventional bipolar plates. This shows that because of the small thickness of the ~~hydrophobing~~ hydrophobic layer the contact resistance between the bipolar plate and an adjoining electrode are not or are only very slightly influenced. In this case no accumulation of water can be established on the surface of the bipolar plate in this case. This shows that this water can be reliably discharged from the fuel cell.